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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/715,389	11/19/2003	Norio Nakatani	K06-163968M/TBS	5476
21254	7590	09/02/2004	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			MILLER, TAKISHA S	
			ART UNIT	PAPER NUMBER
			2855	

DATE MAILED: 09/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/715,389	Applicant(s) NAKATANI ET AL.	
	Examiner Takisha Miller	Art Unit 2855	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/12/04</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Drawings

1. Figure 10 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1,2 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's Admitted Prior Art (AAPA).

a. With respect to claims 1 and 9, AAPA teaches a torque sensor and method of manufacturing comprising a first magnetic shaft (102), a second shaft (103) elastically rotatably connected to the first shaft (102), a nonmagnetic cylindrical magnetism leakage preventing member (104) made of synthetic resin covering an outer periphery of the first shaft (102), a magnetic first detecting cylinder (105) covering an outer periphery of the

magnetism leakage preventing member (1), a magnetic second detecting cylinder (106) integrally rotatable with the second shaft (103), one end of which is opposed to one end of the first detecting cylinder (105) with a clearance and a first coil (108) constituting a first magnetic circuit by generating magnetic flux passing the one end of the first detecting cylinder (105) and the one end of the second detecting cylinder (106), wherein a reluctance with respect to the passing magnetic flux in the first magnetic circuit is changed in accordance with an elastic relative rotational amount by a change in a transmitting torque of the first (102) and second (103) shafts (pg.2, lines 13-20), wherein the magnetism leakage preventing member (104) is molded in a state that the first shaft (102) is inserted into the first detecting cylinder (105) so that the first detecting cylinder (105) and the first shaft (102) are integrated to the magnetism leakage preventing member (104)(pg.3, lines 16-22) (Fig.10).

b. With respect to claim 2, AAPA teaches a torque sensor further comprising a magnetic third detecting cylinder (107) integrally rotatable with the first shaft (102), one end of which is opposed to the other end of the first detecting cylinder (105) with a clearance and a second coil (109) constituting a second magnetic circuit by generating magnetic flux passing the other end of the first detecting cylinder (105) and the other end of the third detecting cylinder (107) wherein the torque transmitted by the first (102) and second (103) shafts is detected based on a deviation between a value in correspondence with a change in the reluctance with respect to the passing magnetic flux in the first magnetic circuit and a value in correspondence with a change in the reluctance with respect to the passing magnetic flux in the second magnetic circuit (pg.3, lines 4-10) and

wherein the magnetism leakage preventing member (104) is molded in a state that the first shaft (102) is inserted into the first detecting cylinder (105) and the third detecting cylinder (107), so that the first detecting cylinder (105), the third detecting cylinder (107) and the first shaft (102) are integrated to the magnetism leakage preventing member (104)(Fig.10).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-8 rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Chikaraishi (6,301,975). AAPA teaches a torque sensor comprising a magnetism leakage preventing member (104) but lacks teaching the first shaft provided with an axial direction displacement restricting portion. Chikaraishi teaches a first shaft (3) provided with an axial direction displacement restricting portion/large diameter portion (3a) for restricting a displacement of a magnetism leakage preventing member (10) in an axial direction of the first shaft (3)(Fig.3). The axial direction displacement restricting portion (3a) includes at least one circumferential groove (12,11) provided at the outer periphery of the first shaft (3) and wherein the magnetism leakage preventing member (10) includes at least one ring-shape projected portion (13) for fitting with the at least one circumferential groove (12)(Figs. 5a, 5b). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify AAPA to include an axial direction displacement restricting portion as taught by Chikaraishi in order to

Art Unit: 2855

prevent an axial displacement of the magnetism leakage preventing member (10) relative to the first shaft (3)(see Chikaraishi; Col. 6, lines 1-42; Col. 10, lines 60-63).


Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (4,996,890) and (6,318,188) teach torque sensors comprising two shafts.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Takisha Miller whose telephone number is (571) 272-2184. The examiner can normally be reached on Monday - Friday (7:00 am - 3:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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